Financial MANAGEMENT

Third Canadian Edition

Theory & Practice

Brigham Ehrhardt Gessaroli Nason

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Financial Management

Theory and Practice

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Financial Management: Theory and Practice, Third Canadian Edition

by Eugene F. Brigham, Michael C. Ehrhardt, Jerome Gessaroli, and Richard R. Nason

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about the authors

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Michael C. Ehrhardt Dr. Ehrhardt is a Professor in the Finance Department at the University of Tennessee and is the Paul and Beverly Castagna Professor of Investments. He did his undergraduate work in Civil Engineering at Swarthmore College. After working several years as an engineer, he returned to graduate school and received an M.S. in Operations Research and a Ph.D. in Finance from the Georgia Institute of Technology. Dr. Ehrhardt taught extensively at the undergraduate, masters, and doctoral levels in the areas of investments, corporate finance, and capital markets. He is a member of the team that developed and delivered the integrative first year of the MBA program. He was the winner of several outstanding teacher awards. Much of Dr. Ehrhardt's research is in the areas of corporate valuation and asset pricing models, including pricing models for interest-rate sensitive instruments. He teaches in Executive Education Programs and consults in the areas of corporate valuation, value-based compensation plans, financial aspects of supply chain management, and the cost of capital.

Jerome Gessaroli Mr. Gessaroli is on faculty at the British Columbia Institute of Technology's School of Business, teaching courses in corporate finance, security analysis, working capital management, and advanced finance. He has an MBA from the Sauder School of Business at the University of British Columbia. Prior to teaching, he worked in the securities industry, first trading equities and options, and later in corporate finance. Mr. Gessaroli also has international business experience, having worked for one of Canada's largest industrial R&D companies developing overseas business opportunities in London, China, Hong Kong, Singapore, and India. He has also consulted to various organizations, given interviews for newspapers, and served on the board of directors for an industry development association.

Richard R. Nason Dr. Nason is an Associate Professor of Finance at Dalhousie University in Halifax, Nova Scotia, where he teaches corporate finance, enterprise risk management, investments, and derivatives. He has been awarded several teaching awards, including Professor of the Year awards and the A. Gordon Archibald Award for Teaching Excellence. His research interests are in risk management, complexity, and financial education. Dr. Nason has an M.Sc. in Physics from the University of Pittsburgh and an M.B.A. and Ph.D. in Finance from Ivey Business School at Western University.

He is also a Chartered Financial Analyst charter holder. Dr. Nason has an extensive background in the derivatives industry. His experience includes structuring equity derivatives and exotics at Citigroup, starting and heading the credit derivatives business for Bank of Montreal, and being head of training for the Global Markets Group at Bank of America. He is a founding partner of RSD Solutions Inc., a risk management consultancy that specializes in financial risk management for financial institutions and corporations, as well as advanced training seminars on derivatives and financial mathematics.

preface

Financial Management: Theory and Practice, Third Canadian Edition, has four goals:

1. To create a text that would help students make better financial decisions;
2. To provide a book that could be used in an introductory finance course, but one that was complete enough for use as a reference text in follow-on case courses and after graduation;
3. To motivate students by demonstrating that finance is interesting and relevant;
4. To make the book clear enough that students could go through the material without wasting either their time or their professor's time trying to figure out what we were saying.

Valuation as a Unifying Theme

Our emphasis throughout the book is on the actions a manager can and should take to increase the value of the firm. Structuring the book around valuation and cash flows will, we hope, enhance continuity and help students see how various topics relate to one another. Near the beginning of each chapter we provide a corporate valuation framework that explicitly shows how a chapter's material relates to corporate valuation so that students can keep the big picture in mind even as they focus on a chapter's specific topics.

The book begins with fundamental concepts, including background on the economic and financial environment, financial statements (with an emphasis on cash flows), the time value of money, financial forecasting, bond valuation, risk analysis, and stock valuation. With this background, we go on to discuss how specific techniques and decision rules can be used to help maximize the value of the firm. This organization provides five important advantages:

1. Managers should try to maximize the fundamental value of a firm, which is determined by cash flows as revealed in financial statements. Our early coverage of financial statements thus helps students see how particular financial decisions affect the various parts of the firm and the resulting cash flow. Also, financial statement analysis provides an excellent vehicle for illustrating the usefulness of spreadsheets.
2. Covering time value of money early helps students see how and why expected future cash flows determine the value of the firm. Also, it takes time for students to digest TVM concepts and to learn how to do the required calculations, so it is good to cover TVM concepts early and often.
3. Most students—even those who do not plan to major in finance—are interested in stock and bond values, rates of return on investments, and the like. The ability to learn is a function of individual interest and motivation, so *Financial Management*'s early coverage of securities and security markets is pedagogically sound.
4. Once basic concepts have been established, it is easier for students to understand both how and why corporations make specific decisions in the areas of capital budgeting, raising capital, working capital management, mergers, and the like.
5. As its title indicates, this book combines theory and practical applications. An understanding of finance theory is absolutely essential for anyone developing and/or implementing effective financial strategies. But theory alone isn't sufficient, so we provide numerous examples in the book and the accompanying *Excel* spreadsheets to illustrate how theory is applied in practice. Indeed, we believe that the ability to analyze financial problems using *Excel* is absolutely essential for a student's successful job search and subsequent career. Therefore, many exhibits in the book come directly from the accompanying *Excel* spreadsheets.

Intended Market and Use

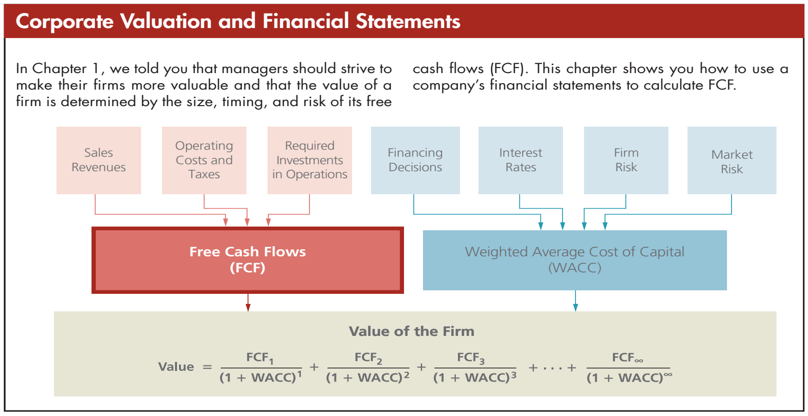
Financial Management, Third Canadian Edition, is designed primarily for use in an introductory finance course and as a reference text in follow-on case courses and after graduation. There is enough material for either a one- or two-term course, especially if the book is supplemented with cases and/or selected readings.

Features of the Third Canadian Edition

Throughout our work on the third Canadian edition, we have strived for completeness and ease of exposition, with an emphasis on current real-world examples, including the latest changes in the financial environment and financial theory. Below we describe elements used throughout the text as well as features that are specific to individual chapters.

Corporate Valuation Emphasis

Given the text's emphasis on valuation, we have placed a corporate valuation framework in the early pages of each chapter. These diagrams make it clear how the chapter's materials relate to the corporate valuation model. They do so by highlighting the specific parts of the model that are relevant to the chapter. We believe this illustrative framework is a simple yet powerful learning tool.



Practical Application of Theory

As happens in most academic disciplines, theory is not always consistent with real life. We realize this and provide students with brief discussions (such as "Capital Structure Theory: Our View" in Chapter 12, and "Current Status of the CAPM" in Chapter 7) on how the theory fits with reality. We also discuss common errors that students may make (such as "Four Mistakes to Avoid" in Chapter 9) when applying financial theory or tools.

Substantial Excel Integration

The application of finance requires extensive use of *Excel*. *Financial Management* has taken the integration of teaching finance and *Excel* to a new level. Illustrations, examples, and formulas are developed using *Excel*, and point-by-point explanations are provided for using *Excel* to model the various concepts. Also, end-of-chapter *Excel* problems provide opportunities to work with finance problems in a much more practical manner than by simply using a calculator. Further information on *Excel* integration is described later on in the "*Excel* Tool Kits" and "Build a Model" sections of this preface.

Canadian Content

We use three criteria for updating the text with Canadian content. (1) Canadian institutions, laws, financial markets, and tax rules are fully reflected in the text. (2) Given the importance of the U.S. markets and institutions to Canada, especially in the area of finance, discussions of key U.S. financial markets and research findings are kept in place where appropriate, along with illustrations. (3) Details with little relevance to Canada, and those of a tertiary nature, have been deleted to maintain focus and clarity.

Corporate Ethics

With corporate ethics and governance issues making headlines throughout the developed economies, we have provided discussions of ethical abuses in Chapter 1 and elsewhere throughout the book. In addition, in Chapter 22, "Corporate Valuation and Governance," we specifically address corporate governance and the actions that both firms and government bodies can take to minimize such events in the future.

Persisting Effects of the 2007–2009 Credit Crisis

At the time of writing this edition, the world's economies are still dealing with the effects of one of the worst financial crises since the Great Depression. It is not an easy story to tell: there are many different opinions about its causes and possible remedies, and there is much that researchers need to learn about those recent events. We do, however, believe it is useful to provide coverage of the credit crisis in a straightforward and readable manner. Our own classroom experience has been that students (whether finance majors or not) are still eager to learn about the credit crisis—including the financial instruments the popular press often refers to—as well as the implications of the crisis for the broader economy. We have provided such a discussion in Chapter 16, "Capital Market Financing: Hybrid and Other Securities." In a number of other chapters, we also discuss specific elements of the financial crisis as they relate directly to the chapter's topic.

Textbook Web Extensions

We have identified specialized topics that are important but not essential for every introductory finance course. We have made this material accessible as chapter Web Extensions, which are provided as Adobe PDF files on the textbook's website at www.nelson.com/brigham3ce or via MindTap. These PDF files are identical in formatting and layout to the text itself. There are 27 Web Extensions from which the instructor and student can choose. We find this an effective way to provide robust coverage without making the actual textbook too large or cumbersome. See the Table of Contents for a complete list of Web Extensions available.

Improvements in the Third Canadian Edition

Throughout the text, we have updated and clarified materials, reviewing the entire book for completeness, ease of exposition, and currency. We have made hundreds of small changes to keep the text up to date, with particular emphasis on updating the real-world examples and including the latest changes in financial theory and the financial environment. We have added more subheadings throughout the book and provided more graphical representations to the data, all of which make the book more readable.

We have made too many small improvements in each chapter to mention them all, but some of the more notable ones are discussed below.

Chapter 1: An Overview of Financial Management and the Financial Environment A new introduction provides an overview of successful Canadian companies. We have also added a new section on "Separating the Investment and Consumption Decision." The "Economic Conditions and Policies That Affect the Cost of Money" section now includes a graph illustrating the federal government's budget deficits/surpluses and trade balances over time.

Chapter 2: Financial Statements, Cash Flow, and Taxes The introduction illustrating the different uses of cash by companies has been completely updated. "Cost of goods sold" has been added to the income statement as a separate line item, allowing for easier analysis. This change is reflected throughout the book. A new vignette titled "Filling in the GAAP" has been added; it describes some key differences between IFRS and U.S. GAAP. A new Challenge Problem has been created for this chapter.

Chapter 3: Analysis of Financial Statements In previous editions, we defined the inventory turnover ratio using sales instead of COGS because some compilers of financial ratio statistics, such as Dun & Bradstreet, use the ratio of sales to inventories. However, most sources now report the turnover ratio using COGS, so we have changed our definition to conform to the majority of reporting organizations and now define the inventory turnover ratio as COGS/Inventories. Also, to be more consistent with many Web-based reporting organizations, we now define the debt ratio as total debt divided by total assets and the debt-to-equity ratio as total debt divided by total equity, whereas previously we used total liabilities in the numerator.

Chapter 4: Time Value of Money We have added a new vignette on payday lending that discusses the controversy over the high interest rates charged on payday loans. Section 4.17, "Amortized Loans," has been expanded to describe how interest and principal can be calculated for a specific time period. Extra material and four new Intermediate Problems were added at the end of the chapter to allow students to get more comfortable with the math.

Chapter 5: Financial Planning and Forecasting Financial Statements Updates and clarifications have been made to this chapter.

Chapter 6: Bonds, Bond Valuation, and Interest Rates A new vignette on Canadian bond covenant and security provisions has been added.

Chapter 7: Risk, Return, and the Capital Asset Pricing Model The chapter introduction has been rewritten. A graph showing the volatility between the overall TSX index and Canadian government Treasury bills has been added. The current vignette on behavioural finance has been enhanced and moved into the chapter's main body as Section 7.5. This section now also discusses a possible explanation for market bubbles from a behavioural finance perspective. Two new Intermediate Problems and one new Challenge Problem have been created for this chapter.

Chapter 8: Stocks, Stock Valuation, and Stock Market Equilibrium The section "The Market Stock Price versus Intrinsic Value," along with the accompanying diagram, has been revised to improve clarity. Section 8.12, "The Efficient Markets Hypothesis," has been expanded and revised. One new Easy Problem and two new Intermediate Problems have been created for this chapter.

Chapter 9: The Cost of Capital The chapter introduction has been rewritten. A new vignette, "In Search of Capital? Head West," has been added and discusses the cost of capital internationally. A new Challenge Problem has been created for this chapter.

Chapter 10: The Basics of Capital Budgeting: Evaluating Cash Flows The chapter introduction has been rewritten and now uses an oil sands investment example to introduce the chapter material. The section on "Multiple IRRs" has been revised, making it simpler to understand.

Chapter 11: Cash Flow Estimation and Risk Analysis A new introduction expands upon the oil sands example from Chapter 10 and provides context for Chapter 11's discussion on the appropriate cash flows to consider when evaluating a new project's investment potential. The section discussing the various cash flows has been placed earlier in the chapter so it is read before the full analysis of a project example given in Section 11.3. A Web Extension, 11A, which discusses Monte Carlo simulation in capital budgeting, has been added. Three new Easy Problems and one new Intermediate Problem have been added to this chapter.

Chapter 12: Capital Structure Decisions A new vignette discussing capital structures across industries in Canada has been added. We updated Section 12.7 "Capital Structure Evidence and Implications," to include results from the latest empirical tests and reorganized the material and added sub-headings to improve clarity.

Chapter 13: Distributions to Shareholders: Dividends and Repurchases The chapter introduction has been rewritten and now discusses how Apple Computer distributes cash back to shareholders.

Chapter 14: Initial Public Offerings, Investment Banking, and Financial Restructuring The chapter introduction has been completely updated. Two new vignettes have been added, "Crowdfunding and Raising Capital" and "Life in the Fast Lane: High-Frequency Trading!" A new Easy Problem has been created for this chapter.

Chapter 15: Lease Financing The chapter introduction has been rewritten. A new vignette has been added illustrating the use of sale and leaseback agreements by Loblaw and Canadian Tire.

Chapter 16: Capital Market Financing: Hybrid and Other Securities A new vignette on BlackBerry's decision to use convertible debenture financing was added. One new Easy Problem has been created for this chapter.

Chapter 17: Working Capital Management and Short-Term Financing The chapter introduction has been completely updated. Section 17.1, "Overview of Working Capital Management," has been added. Two new vignettes have been added: "Electronic Payments in Canada: What's the Hold-Up?" and "Some Firms Operate with Negative Working Capital!" A new Spreadsheet Problem has also been created for this chapter.

Chapter 18: Current Asset Management The chapter introduction has been rewritten. A new vignette discusses the levels of cash and other current assets held by Canadian companies.

Chapter 19: Financial Options and Applications in Corporate Finance This chapter was shortened by eliminating discussion of the multi-period binomial model. The chapter has an increased focus on the Black-Scholes option pricing model and the factors that affect option prices.

Chapter 20: Enterprise Risk Management We rewrote much of this chapter, changing it from a chapter about derivatives with applications to risk management to a chapter about enterprise risk management with applications of derivatives as one of several tools in managing risk. We adapted the general enterprise risk management framework of the Treadway Commission's Committee of Sponsoring Organizations (COSO) as it is one of the most comprehensive and widely used risk management frameworks.

Chapter 22: Corporate Valuation and Governance We have revised and streamlined this chapter to focus on two major areas: valuation and governance. In doing so, we were able to introduce new material on agency conflicts.

Chapter 23: Mergers, Acquisitions, and Restructuring In Section 23.8, "Setting the Bid Price," we have added new material on "Relative Bargaining Power" and "Cash Offers versus Stock Offers." The existing vignette on "Limits to Foreign Acquisitions" has been expanded and updated based on more recent Canadian events.

Chapter 24: Decision Trees, Real Options, and Other Capital Budgeting Topics This chapter is now available online for flexibility in course offerings.

Walkthrough of Pedagogical Features

Real-World Chapter Introductions

Every chapter starts with a context-setting, real-world example of the material about to be covered. This introduction indicates to students how the material fits in with today's financial environment.

chapter 14

Initial Public Offerings, Investment Banking, and Financial Restructuring

In any given month, many businesses go to the market to raise capital. Following are some examples of securities sold in 2014:

1. PrairieSky Royalty Ltd. is a company whose assets consist of mineral titles in lands primarily containing petroleum and natural gas. Encana Corporation, the sole owner of PrairieSky, sold 52 million common shares of PrairieSky in an initial public offering. Its underwriters, TD Securities and CIBC World Markets (along with eight others), anticipated that the stock could be sold in the range of $23 to $26.50. The actual offering was higher at $28, and the stock closed its first day of trading on the TSX at $37. Although the new investors paid $28 per share, Encana received only $26.60. The difference went to the underwriters as a fee for bringing the issue to market. Thus, out of the $1.456 billion paid by investors, Encana received $1.383 billion, and the underwriters and their sales force received $73 million.
2. Pembina Pipeline raised a total of $250 million by selling 10 million preferred shares with a dividend of 5%. The dividend is fixed for 5 years, after which the shares may be redeemed by the company. If not redeemed, investors have the option to reset the dividend to either a new fixed or floating-rate amount, based upon a specified formula. The proceeds will be used to partly fund the company's capital projects, to pay down some debt, and for general company purposes.
3. RioCan Real Estate Investment Trust sold $150 million of senior unsecured debentures. The debentures carry a coupon of 3.62% and mature in 2020. DBRS rated the debentures BBB (high). At the time of issue, the issue had a yield spread of 1.5 percentage points above the yield of a Government of Canada bond with a similar term to maturity. As part of the agreed-upon terms, RioCan agrees to maintain an EBITDA to interest expense ratio of 1.65 or greater.

These three issues represent an initial public offering, a preferred share offering, and a debt offering. After reading this chapter, you should have a better understanding of the procedures followed by these and other firms when issuing securities.

Finance: Small Business Vignettes

Small business accounts for about one-quarter of Canada's GDP. Yet typically, this important sector is scarcely mentioned in most finance texts. Throughout the text we have embedded a number of vignettes discussing the challenges that small businesses face when applying the financial concepts and tools being discussed.

FINANCE: SMALL BUSINESS

Cost of Capital for Small and Privately Owned Businesses

Small and privately owned businesses face unique challenges in calculating their cost of capital. In the previous discussion we have used past stock prices to estimate beta, which in turn was used in the CAPM to calculate the company's cost of equity. But obviously, if shares of a small business don't trade publicly, the required historical stock data are not available. This poses a challenge to smaller businesses. How do they estimate their cost of equity? One method would be to identify one or more publicly traded firms that are in the same industry and that are approximately the same size as the privately owned firm. Betas are then estimated for the publicly traded companies; an average beta is taken and used as an estimated beta for the private company. Note that this is similar to the pure play method for estimating divisional beta that we discussed earlier. With an estimate of beta, the cost of equity can be estimated using the CAPM approach. There is, however, evidence that few small businesses actually calculate their cost of capital. Also, only a minority of small businesses surveyed calculate their WACC. They in fact find it hard to determine their cost of equity.[a]

The liquidity of owning stock in a privately held firm is less than the liquidity of publicly held stock. Just as the yield on a thinly traded bond has a liquidity premium, the required return on stock in a privately held firm should reflect a liquidity premium. An ad hoc adjustment can be made to reflect this lack of liquidity by adding 1 to 3 percentage points to the firm's cost of equity. This "rule of thumb" is not very satisfying theoretically because we don't know exactly how large a liquidity premium to add, but it is very common in practice.

There are also problems in estimating the capital structure weights. Capital structure weights should be based on the target market-value weights. However, a privately held firm can't observe its market value. If a firm doesn't know its current market weights, that makes it difficult for the firm to estimate its target weights. To resolve this problem, many analysts begin by making a trial guess as to the value of the firm's equity. The analysts then use this estimated value of equity to estimate the cost of capital, then use the cost of capital to estimate the value of the firm, and complete the circle by using the esti-

Finance: In Focus Vignettes

Finance: In Focus Vignettes A number of vignettes throughout the text provide interesting real-life examples of how the concepts discussed in the chapter at hand are important in today's business environment.

FINANCE: IN FOCUS

Leasing to Unlock Shareholder Value

What do Loblaw and Canadian Tire have in common? Neither of them directly owns the real estate and buildings that drive their operations. Loblaw was the first of the two to sell its properties for $7 billion to Choice Properties real estate investment trust and then lease them back on a long-term basis. Choice Properties then went on to raise $600 million through an IPO, $200 million through the sale of equity to George Weston Limited, and another $800 million through a debenture issue. Much of the funds were used to pay Loblaw for the assets.

More recently, Canadian Tire sold off its stores and land to CT REIT, which also went public soon after. By the two companies separating their real estate assets from their core retail operations, investors were able to value the real estate businesses separately (and higher) than when they were part of Loblaw's and Canadian Tire's overall corporate operations. The sale and leaseback of the properties also freed up cash to either reinvest in operations or to be distributed back to shareholders. While the effect on day-to-day operations was minimal, the effect on its stock price was not. The graph below shows the effect on the companies' share prices when they announced (Day 0) the restructuring. Loblaw's stock closed up over 13% while Canadian Tire's stock climbed about 10%. Over $4.8 billion in shareholder wealth was added by selling their properties to a REIT and leasing them back.

CONCEPT REVIEW

1. Identify two ratios that are used to analyze a firm's liquidity position, and write out their equations.
2. What are the characteristics of a liquid asset? Give some examples.
3. Which current asset is typically the least liquid?
4. A company has current liabilities of $800 million, and its current ratio is 2.5. What is its level of current assets? (Check Figure: $2,000 million) If this firm's quick ratio is 2, how much inventory does it have? (Check Figure: $400 million)

Concept Review questions Students learn specific concepts and understand particular numerical examples best if they work with illustrative questions immediately after they read the applicable section material. Concept Reviews provide this opportunity for immediate reinforcement at the end of most major sections. Numerical questions also include a "check figure" in parentheses, to help students check their work. And for these, fully solved *Excel* worksheets are also available on the textbook's website at www.nelson.com/brigham3ce or via MindTap.

Formulas and Equations Thoroughly explaining finance requires mathematical equations. Whenever a new equation is introduced, it is placed in a shaded box and given a specific equation number. The spacing and shading makes reading the text easy, while the equation numbering makes it straightforward to follow which equation is being referred to in future discussions.

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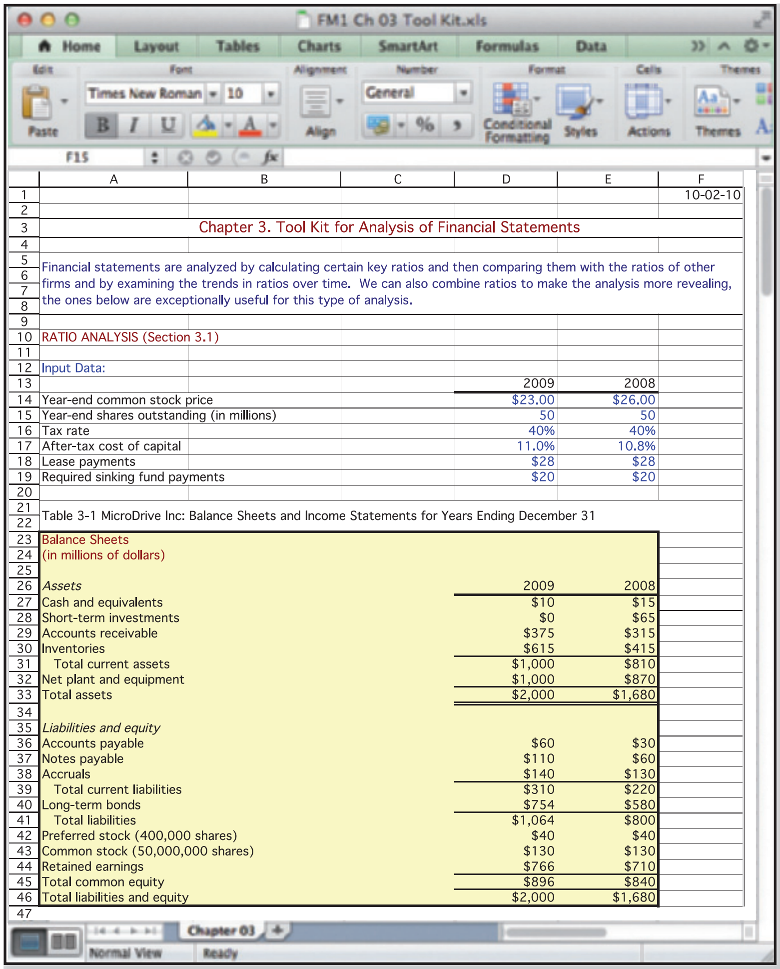
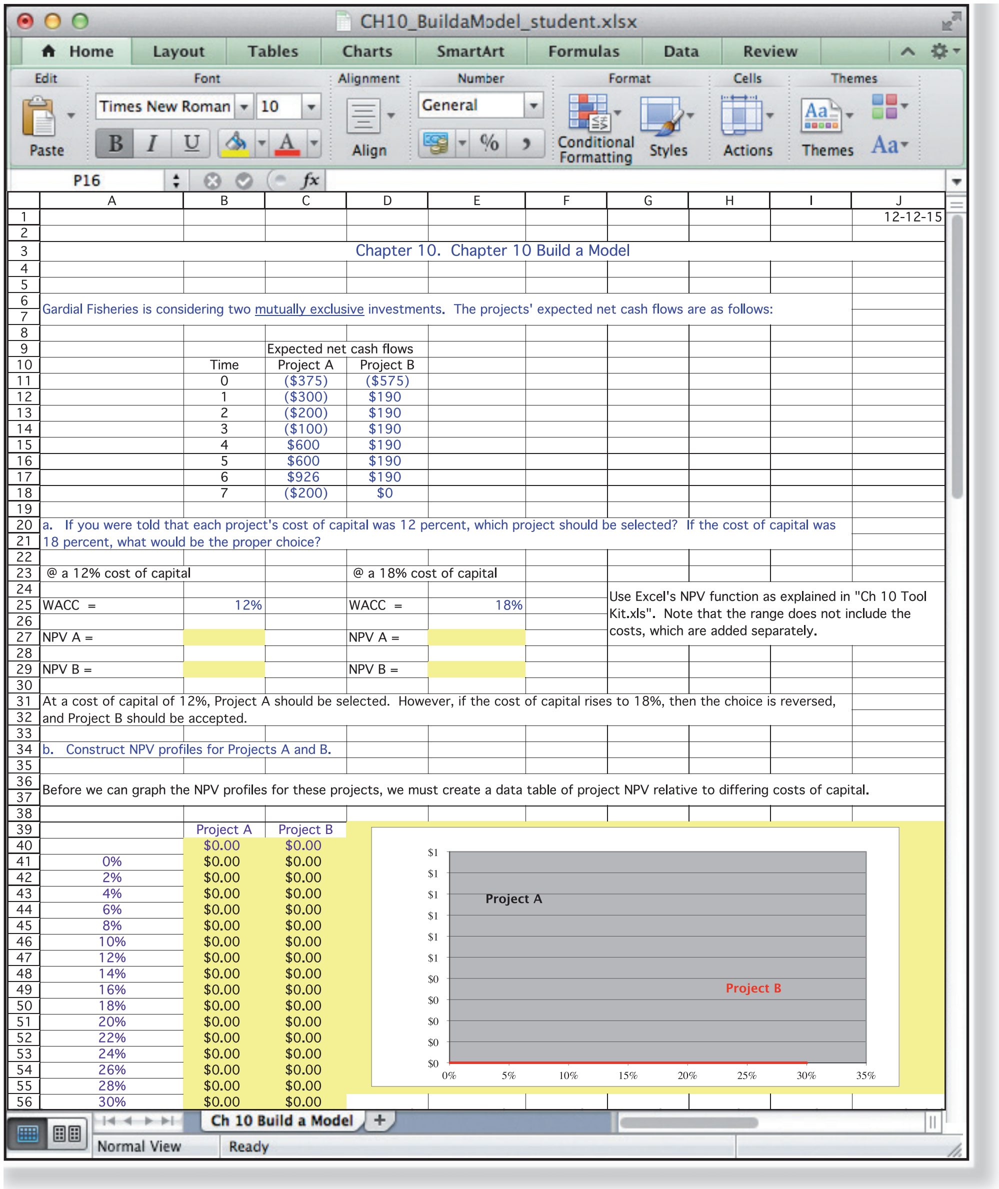
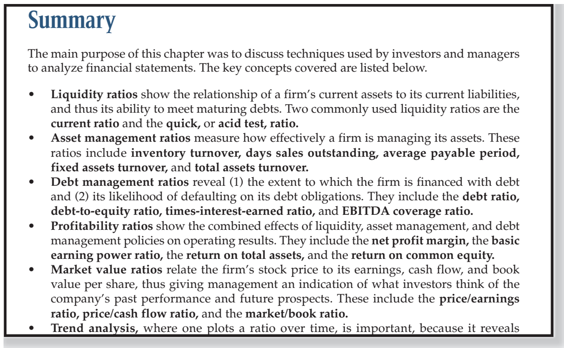


	A	B	C	D	E	F
1						10-02-10
2						
3	Chapter 3. Tool Kit for Analysis of Financial Statements					
4						
5–8	Financial statements are analyzed by calculating certain key ratios and then comparing them with the ratios of other firms and by examining the trends in ratios over time. We can also combine ratios to make the analysis more revealing, the ones below are exceptionally useful for this type of analysis.					
9						
10	RATIO ANALYSIS (Section 3.1)					
11						
12	Input Data:					
13				2009	2008	
14	Year-end common stock price			$23.00	$26.00	
15	Year-end shares outstanding (in millions)			50	50	
16	Tax rate			40%	40%	
17	After-tax cost of capital			11.0%	10.8%	
18	Lease payments			$28	$28	
19	Required sinking fund payments			$20	$20	
20						
21–22	Table 3-1 MicroDrive Inc: Balance Sheets and Income Statements for Years Ending December 31					
23	Balance Sheets					
24	(in millions of dollars)					
25						
26	*Assets*			2009	2008	
27	Cash and equivalents			$10	$15	
28	Short-term investments			$0	$65	
29	Accounts receivable			$375	$315	
30	Inventories			$615	$415	
31	Total current assets			$1,000	$810	
32	Net plant and equipment			$1,000	$870	
33	Total assets			$2,000	$1,680	
34						
35	*Liabilities and equity*					
36	Accounts payable			$60	$30	
37	Notes payable			$110	$60	
38	Accruals			$140	$130	
39	Total current liabilities			$310	$220	
40	Long-term bonds			$754	$580	
41	Total liabilities			$1,064	$800	
42	Preferred stock (400,000 shares)			$40	$40	
43	Common stock (50,000,000 shares)			$130	$130	
44	Retained earnings			$766	$710	
45	Total common equity			$896	$840	
46	Total liabilities and equity			$2,000	$1,680	
47						

Excel Tool Kits We have created *Excel* Tool Kits to enhance student proficiency with spreadsheets. Created for each chapter (except Chapter 1), these models include explanations and screen shots that show students how to use many of the features and functions of *Excel*. We have integrated the Tool Kit models into the text so that many figures and tables in the textbook are drawn right from the *Excel* model, including the *Excel* row and column headings so that students can see exactly how the problem is worked in *Excel*. The Tool Kits are available to students on the textbook's website at www.nelson.com/brigham3ce or via MindTap.



Build a Model Excel Spreadsheets Chapters 2 to 23 include a Spreadsheet Problem. To complement these, *Excel* spreadsheets have been developed. These spreadsheets contain data from the problem, plus general instructions relating to solving it. The problem is partially completed, and the student must "build a model" in order to complete it. These models are available to students on the textbook's website at www.nelson.com/brigham3ce or via MindTap. Fully completed models are available to instructors.



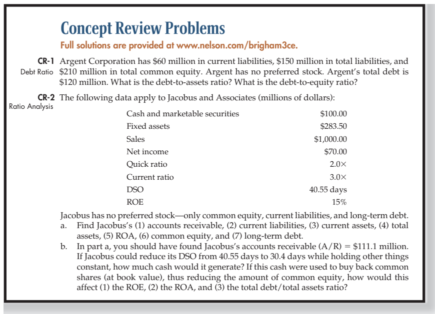
Summary

The main purpose of this chapter was to discuss techniques used by investors and managers to analyze financial statements. The key concepts covered are listed below.

- **Liquidity ratios** show the relationship of a firm's current assets to its current liabilities, and thus its ability to meet maturing debts. Two commonly used liquidity ratios are the **current ratio** and the **quick,** or **acid test, ratio.**
- **Asset management ratios** measure how effectively a firm is managing its assets. These ratios include **inventory turnover, days sales outstanding, average payable period, fixed assets turnover,** and **total assets turnover.**
- **Debt management ratios** reveal (1) the extent to which the firm is financed with debt and (2) its likelihood of defaulting on its debt obligations. They include the **debt ratio, debt-to-equity ratio, times-interest-earned ratio,** and **EBITDA coverage ratio.**
- **Profitability ratios** show the combined effects of liquidity, asset management, and debt management policies on operating results. They include the **net profit margin,** the **basic earning power ratio,** the **return on total assets,** and the **return on common equity.**
- **Market value ratios** relate the firm's stock price to its earnings, cash flow, and book value per share, thus giving management an indication of what investors think of the company's past performance and future prospects. These include the **price/earnings ratio, price/cash flow ratio,** and the **market/book ratio.**
- **Trend analysis,** where one plots a ratio over time, is important, because it reveals

Summary

Each chapter includes a bullet-point summary. Each bullet covers a key concept discussed in the chapter. The key terms and/or concepts are bolded both in the body of the chapter and in the summary, making it easy for students to go back into the chapter to review specific materials.



Concept Review Problems

Full solutions are provided at www.nelson.com/brigham3ce.

CR-1 Debt Ratio — Argent Corporation has $60 million in current liabilities, $150 million in total liabilities, and $210 million in total common equity. Argent has no preferred stock. Argent's total debt is $120 million. What is the debt-to-assets ratio? What is the debt-to-equity ratio?

CR-2 Ratio Analysis — The following data apply to Jacobus and Associates (millions of dollars):

Cash and marketable securities	$100.00
Fixed assets	$283.50
Sales	$1,000.00
Net income	$70.00
Quick ratio	2.0×
Current ratio	3.0×
DSO	40.55 days
ROE	15%

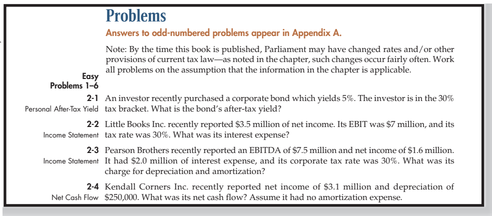
Jacobus has no preferred stock—only common equity, current liabilities, and long-term debt.
a. Find Jacobus's (1) accounts receivable, (2) current liabilities, (3) current assets, (4) total assets, (5) ROA, (6) common equity, and (7) long-term debt.
b. In part a, you should have found Jacobus's accounts receivable (A/R) = $111.1 million. If Jacobus could reduce its DSO from 40.55 days to 30.4 days while holding other things constant, how much cash would it generate? If this cash were used to buy back common shares (at book value), thus reducing the amount of common equity, how would this affect (1) the ROE, (2) the ROA, and (3) the total debt/total assets ratio?

Concept Review Problems

At the end of each chapter are comprehensive concept review problems. These problems allow students to test their knowledge of the chapter's primary concepts. Answers are available to students on the textbook's website at www.nelson.com/brigham3ce or via MindTap. Full solutions are available to instructors.

End-of-Chapter Problems

To assist student learning, we have arranged problems by difficulty. The first set of problems is designated "Easy," and most students should be able to work them without much trouble. Then come "Intermediate" problems, which are a bit harder, followed by "Challenging" ones, which are longer and more complex. This ranking procedure reduces students' stress and frustration because they can clearly identify which problems are going to require more effort. Answers to odd-numbered problems appear in Appendix A. Full solutions are available to instructors.



Problems

Answers to odd-numbered problems appear in Appendix A.

Note: By the time this book is published, Parliament may have changed rates and/or other provisions of current tax law—as noted in the chapter, such changes occur fairly often. Work all problems on the assumption that the information in the chapter is applicable.

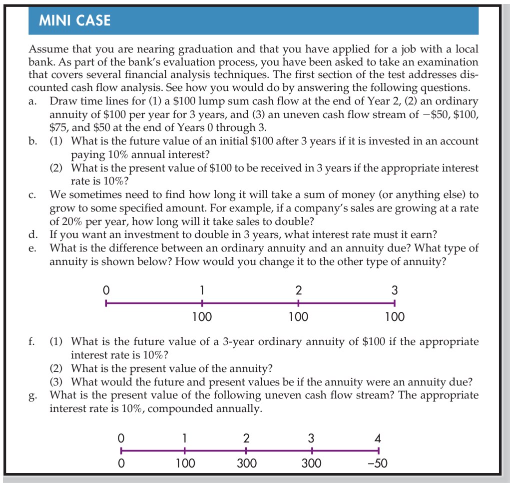
Easy Problems 1–6

2-1 Personal After-Tax Yield — An investor recently purchased a corporate bond which yields 5%. The investor is in the 30% tax bracket. What is the bond's after-tax yield?

2-2 Income Statement — Little Books Inc. recently reported $3.5 million of net income. Its EBIT was $7 million, and its tax rate was 30%. What was its interest expense?

2-3 Income Statement — Pearson Brothers recently reported an EBITDA of $7.5 million and net income of $1.6 million. It had $2.0 million of interest expense, and its corporate tax rate was 30%. What was its charge for depreciation and amortization?

2-4 Net Cash Flow — Kendall Corners Inc. recently reported net income of $3.1 million and depreciation of $250,000. What was its net cash flow? Assume it had no amortization expense.



MINI CASE

Assume that you are nearing graduation and that you have applied for a job with a local bank. As part of the bank's evaluation process, you have been asked to take an examination that covers several financial analysis techniques. The first section of the test addresses discounted cash flow analysis. See how you would do by answering the following questions.

a. Draw time lines for (1) a $100 lump sum cash flow at the end of Year 2, (2) an ordinary annuity of $100 per year for 3 years, and (3) an uneven cash flow stream of −$50, $100, $75, and $50 at the end of Years 0 through 3.
b. (1) What is the future value of an initial $100 after 3 years if it is invested in an account paying 10% annual interest?
(2) What is the present value of $100 to be received in 3 years if the appropriate interest rate is 10%?
c. We sometimes need to find how long it will take a sum of money (or anything else) to grow to some specified amount. For example, if a company's sales are growing at a rate of 20% per year, how long will it take sales to double?
d. If you want an investment to double in 3 years, what interest rate must it earn?
e. What is the difference between an ordinary annuity and an annuity due? What type of annuity is shown below? How would you change it to the other type of annuity?

f. (1) What is the future value of a 3-year ordinary annuity of $100 if the appropriate interest rate is 10%?
(2) What is the present value of the annuity?
(3) What would the future and present values be if the annuity were an annuity due?
g. What is the present value of the following uneven cash flow stream? The appropriate interest rate is 10%, compounded annually.

Mini Cases

Mini cases are provided for each chapter. These integrated problems are framed in a more realistic manner. Most mini cases have both descriptive and quantitative questions that cover much of the chapter's key content. Instructors can assign the cases in their entirety or utilize only some of the questions. Detailed descriptive and quantitative solutions are available to instructors.

Instructor Resources

The **Nelson Education Teaching Advantage (NETA)** program delivers research-based instructor resources that promote student engagement and higher-order thinking to enable the success of Canadian students and educators. Visit Nelson Education's **Inspired Instruction** website at http://www.nelson.com/inspired/ to find out more about NETA.

The following instructor resources have been created for *Financial Management: Theory and Practice*, Third Canadian Edition. Access these ultimate tools for customizing lectures and presentations at **www.nelson.com/instructor**.

NETA Test Bank

This resource was written by Patrick O'Meara, Southern Alberta Institute of Technology. It includes more than 1,500 multiple-choice questions written according to NETA guidelines for effective construction and development of higher-order questions. Also included are about 500 True/False questions.

The NETA Test Bank is available in a new, cloud-based platform. **Nelson Testing Powered by Cognero®** is a secure online testing system that allows instructors to author, edit, and manage test bank content from anywhere Internet access is available. No special installations or downloads are needed, and the desktop-inspired interface, with its drop-down menus and familiar, intuitive tools, allows instructors to create and manage tests with ease. Multiple test versions can be created in an instant, and content can be imported or exported into other systems. Tests can be delivered from a learning management system, the classroom, or wherever an instructor chooses. Nelson Testing Powered by Cognero for *Financial Management: Theory and Practice* can also be accessed through www.nelson.com/instructor.

NETA PowerPoint

Microsoft® PowerPoint® lecture slides for every chapter have been created by Zhen Wang, Laurentian University. There is an average of 60 slides per chapter, many featuring key figures and tables from *Financial Management: Theory and Practice*. NETA principles of clear design and engaging content have been incorporated throughout, making it simple for instructors to customize the deck for their courses.

Image Library

This resource consists of digital copies of figures and short tables used in the book. Instructors may use these jpegs to customize the NETA PowerPoint or create their own PowerPoint presentations.

Instructor's Solutions Manual

This manual, prepared by authors Jerome Gessaroli and Richard Nason, includes worked-out solutions to all end-of-chapter material. It has been independently checked for accuracy by Ross Meacher.

Build-A-Model Solutions

These downloadable *Excel* spreadsheets integrate with the Spreadsheet Problems at the end of each chapter (excluding Chapter 1). Student versions of these files provide instructions relating to "building the model" and solving the problem. Instructor versions are fully completed models. These solutions have been revised by Shantanu Dutta, University of Ottawa.

Mini-Case Solutions

Mini cases appear at the end of each chapter, and include both descriptive and quantitative questions that cover much of the chapter's content. Solutions for these mini cases have been revised by textbook authors Jerome Gessaroli and Rick Nason, and spreadsheets have been further checked and revised by Shantanu Dutta, University of Ottawa.

Web Extensions

Most chapters in *Financial Management: Theory and Practice* include online "appendices" that provide more detailed coverage of topics addressed in the chapter. Available for students and instructors, these extensions are downloadable PDF files, designed just like the text chapters. An instructor can use any of the extensions to provide deeper coverage of material. We believe that these Web Extensions provide significant flexibility for meeting the variety of needs that finance professors have in the classroom. See the Table of Contents for a full listing.

MindTap

Offering personalized paths of dynamic assignments and applications, **MindTap** is a digital learning solution that turns cookie-cutter into cutting-edge, apathy into engagement, and memorizers into higher-level thinkers. MindTap enables students to analyze and apply chapter concepts within relevant assignments, and allows instructors to measure skills and promote better outcomes with ease. A fully online learning solution, MindTap combines all student learning tools—readings, multimedia, activities, and assessments—into a single Learning Path that guides the student through the curriculum. Instructors personalize the experience by customizing the presentation of these learning tools to their students, even seamlessly introducing their own content into the Learning Path.

Aplia

Aplia™ is a Cengage Learning online homework system dedicated to improving learning by increasing student effort and engagement. Aplia makes it easy for instructors to assign frequent online homework assignments. Aplia provides students with prompt and detailed feedback to help them learn as they work through the questions, and features interactive tutorials to fully engage them in learning course concepts. Automatic grading and powerful assessment tools give instructors real-time reports of student progress, participation, and performance, while Aplia's easy-to-use course management features let instructors flexibly administer course announcements and materials online. With Aplia, students will show up to class fully engaged and prepared, and instructors will have more time to do what they do best—teach. The Aplia problem sets for *Financial Management* were reviewed for consistency with the third Canadian edition by Scott Anderson, Ryerson University.

Student Ancillaries

Companion Website

Nelson Education's Companion Website for *Financial Management: Theory and Practice*, Third Canadian Edition, provides a variety of downloadable material to help students as they work through concepts in the text. Visit **www.nelson.com/brigham3ce** to access this material.

Excel Tool Kits: *Excel* Tool Kits have been developed to enhance proficiency with *Excel*. Created for each chapter, except Chapter 1, these models include explanations and screenshots to show how to use features and functions in *Excel*. A spreadsheet icon in the margin of the text alerts students to when a Tool Kit is available.

Concept Review Worked Solutions: Concept Reviews often appear at the end of a major section, to test your understanding of a concept immediately after you read about it. Numerical questions also include a "check figure" in parentheses, to help check your work. For these, fully worked Concept Review worked solutions (in *Excel*) are available on the textbook's website.

Build-a-Model Spreadsheets: Chapters 2 to 23 include a Spreadsheet Problem. These downloadable *Excel* spreadsheets contain data from the problem, plus general instructions relating to solving the problem. The spreadsheets are partially completed, and the student must "build a model" in order to finalize each one.

Answers to Concept Review Problems: These downloadable PDFs provide answers to the Concept Review Problems at the end of chapters. Use these to help check your progress as you work through the text.

Web Extensions: These chapter "appendices" provide more detailed coverage of topics addressed in the chapter. Presented as downloadable PDF files, they are designed just like the text chapters. See the Table of Contents for a full listing of Web Extensions available.

Calculator Tutorials: These tutorials help acclimatize students to using financial calculators in financial management.

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Stay organized and efficient with ***MindTap***—a single destination with all the course material and study aids you need to succeed. Built-in apps leverage social media and the latest learning technology. For example:

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Aplia

Founded in 2000 by economist and Stanford professor Paul Romer, **Aplia™** is an educational technology company dedicated to improving learning by increasing student effort and engagement. Currently, Aplia products have been used by more than a million students at over 1,300 institutions. Aplia offers a way for you to stay on top of your coursework with regularly scheduled homework assignments that increase your time on task and give you prompt feedback. Interactive tools and additional content are provided to further increase your engagement and understanding. See http://www.aplia.com for more information. If Aplia isn't bundled with your copy of *Financial Management: Theory and Practice,* Third Canadian Edition, you can purchase access separately at NELSONbrain.com. Be better prepared for class with Aplia!

Acknowledgements

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Accuracy

At this point, authors generally say something like this: "We appreciate all the help we received from the people listed above, but any remaining errors are, of course, our own responsibility." And in many books, there are plenty of remaining errors. Having experienced difficulties with errors ourselves, both as students and as instructors, we resolved to avoid this problem in *Financial Management*. As a result of our error detection procedures, we are convinced that the book is as free of mistakes as we can make it. We would like to thank Ross Meacher for the detailed accuracy checks on our Problems and Solutions Manual.

Conclusion

Finance is, in a real sense, the cornerstone of the free enterprise system. Good financial management is therefore vitally important to the economic health of business firms, hence to the nation and the world. Because of its importance, corporate finance should be thoroughly understood. However, this is easier said than done—the field is relatively complex and undergoes constant change in response to shifts in economic conditions. All of this makes corporate finance stimulating and exciting, but also challenging and sometimes perplexing. We sincerely hope that *Financial Management: Theory and Practice*, Third Canadian Edition will help readers understand and solve the financial problems faced by businesses today.

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University of Florida

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British Columbia Institute of Technology
Richard R. Nason
Dalhousie University

June 2015

part 1

Fundamental Concepts

chapter 1

An Overview of Financial Management and the Financial Environment

What does it take to be one of Canada's "Best Managed Companies"? Well, Deloitte Canada has been assessing companies annually over the past 20 years for this prestigious title. For 2013, a few companies that made the cut included Canadian Tire, CCI Inc., Purdys Chocolatier, and Upside Engineering. What do these companies have that separates them from the rest of the pack?

Deloitte looks at three broad areas: (1) strategy—how well do companies articulate their core competencies and build value; (2) capability—how well do they execute their strategy including customer-focused activities as well as the use of technological solutions; and (3) commitment—how well companies identify, retain, and nurture employees and leaders. Many of these companies operate in highly competitive markets in which they face threats from much larger or even worldwide multinational corporations. How do they thrive and survive in such an environment? Deloitte found one recurring trait is an ability to adapt to a rapidly changing business environment. Adaptability is a necessary skill, particularly in the current climate with its accelerated pace of change driven by technological advances and business globalization. Another enduring characteristic of Canadian business is sustainability. Successful Canadian businesses have plans that are well thought out, and controlled investments that, like all efficient deployments of capital, are seeking the highest rate of return. For example, Toronto-based Spin Master, a toy and entertainment company, places significant emphasis on its information system platforms for building out its international network of product offerings. Newterra, an environmental systems company, maintains its competitive advantage through constant innovation and new product offerings. The company's innovative technologies are created by a combination of internal development, acquisitions, and small continuous improvements. The Great Little Box Company, which produces packaging supplies and services, had grown from just three employees in 1986 to over 250 employees by 2012. Its growth is widely credited due to the company's significant investment in hiring, managing, and workforce management practices.

In a nutshell, these companies succeeded by innovating, applying technology in a clear strategic manner, and fostering a work environment that allows employees to fully utilize their skills and talents. As you will see throughout this book, the resulting cash flows and superior return on capital also create value for shareholders.

Source: Adapted from Peter Brown and John Hughes, *Power of the Best* (Toronto: Penguin Group, 2012), viii–x, 77–81, 145–150, 191–198.

This chapter should give you an idea of what financial management is all about, including an overview of the financial markets in which corporations operate. Before getting into details, let's look at the big picture. You're probably in school because you want an interesting, challenging, and rewarding career. To see where finance fits in, here's a five-minute business degree.

1.1 The Five-Minute Business Degree

Okay, we realize you can't get a business degree in five minutes. But just as an artist quickly sketches the outline of a picture before filling in the details, we can sketch the key elements of a business education. In a nutshell, the objective of a business degree is to provide managers with the knowledge and skills they need to run successful companies, so we start our sketch with some common characteristics of successful companies. In particular, all successful companies are able to accomplish two main goals:

1. They identify, create, and deliver products or services that are highly valued by customers—so highly valued that customers choose to purchase them from the company rather than from its competitors.
2. All successful companies sell their products/services at prices that are high enough to cover costs and to compensate owners and creditors for their exposure to risk.

Visit the textbook's website. This ever-evolving site, for students and instructors, is a tool for teaching, learning, and financial research. **www.nelson.com/brigham3ce**

It's easy to talk about satisfying customers and investors, but it's not so easy to actually do so. If it were, then all companies would be successful, and you wouldn't need a business degree!

The Key Attributes of Successful Companies

First, *successful companies have skilled people* at all levels inside the company, including leaders, managers, and a capable workforce.

Second, *successful companies have strong relationships* with groups outside the company. For example, successful companies develop win–win relationships with suppliers and excel in customer relationship management.

Third, *successful companies have enough funding* to execute their plans and support their operations. Most companies need cash to purchase land, buildings, equipment, and materials. Companies can reinvest a portion of their earnings, but most growing companies must also raise additional funds externally, by some combination of selling shares and/or borrowing in the financial markets.

Just as a stool needs all three legs to stand, a successful company must have all three attributes: skilled people, strong external relationships, and sufficient capital.

A Business Degree, Finance, and Your Career

To succeed, a company must meet its first main goal: identifying, creating, and delivering highly valued products and services for its customers. This requires that it possess all three of the key attributes mentioned above. Therefore, it's not surprising that most of your business courses are directly related to these attributes. For example, courses in economics, communication, strategy, organizational behaviour, and human resources should prepare you for a managerial role and enable you to manage your company's workforce effectively. Other courses, such as marketing, operations management, and information technology, increase your knowledge of specific disciplines, enabling you to develop the efficient business processes and strong external relationships your company needs. Portions of *this* finance course will address raising the capital your company needs to implement its plans. In short, your business courses will give you the skills you need to help a company achieve its first goal: producing goods and services that customers want.

Recall though, that it's not enough just to have highly valued products and satisfied customers. Successful companies must also meet their second main goal, which is generating enough cash to compensate the investors who provided the necessary capital. To help your company accomplish this second goal, you must be able to evaluate any proposal, whether it relates to marketing, production, strategy, or any other area, and implement only the projects that add value for your investors. For this, you must have expertise in finance, no matter your major. Thus, finance is a critical part of a business education, and it will help you throughout your career.

CONCEPT REVIEW

1. What are the goals of successful companies?
2. What are the three key attributes common to all successful companies?
3. How does expertise in finance help a company become successful?

1.2 The Corporate Life Cycle

Many major corporations had humble origins. Auto parts manufacturer Linamar Corporation started in a garage, while George Weston Ltd. began with two bread routes. How was it possible for these companies to grow into the corporations we see today? No two companies develop in exactly the same way, but the following sections describe some typical stages in the corporate life cycle.

Starting up as a Proprietorship

Many companies begin as a **sole proprietorship**, which is an unincorporated business owned by one individual. Starting a business as a proprietor is easy—one merely begins business operations in one's own name. If doing business under another name, a provincial registration is required. The proprietorship has three important advantages: (1) it is easily and inexpensively formed, (2) it is subject to few government regulations, and (3) its income is not subject to corporate taxation but is taxed only as a part of the proprietor's personal income.

However, the proprietorship also has three important limitations: (1) it is difficult for a proprietorship to obtain the capital needed for growth; (2) the proprietor has unlimited personal liability for the business's debts, which can result in losses that exceed the money he or she invested in the business (creditors may even be able to seize a proprietor's house or other personal property!); and (3) the life of a proprietorship is limited to the life of its founder. For these three reasons, sole proprietorships are used primarily for small businesses. In fact, proprietorships account for only about 13% of all sales, based on dollar values, even though about 80% of all businesses are proprietorships.

More Than One Owner: A Partnership

Some companies start with more than one owner, and some proprietors decide to add a partner as the business grows. A **partnership** exists whenever two or more persons or entities associate to conduct a noncorporate business for profit. Partnerships may operate under different degrees of formality, ranging from informal, oral understandings to formal agreements. Partnerships must also be registered in the province they were formed. Partnership agreements define the ways any profits and losses are shared between partners. A partnership's advantages and disadvantages are similar to those of a proprietorship.

Regarding liability, the partners can potentially lose all of their personal assets, even assets not invested in the business, because under partnership law, each partner is liable for the business's debts. Therefore, in the event the partnership goes bankrupt, if any partner is unable to meet his or her pro rata liability, the remaining partners must make good on the unsatisfied claims, drawing on their personal assets to the extent necessary. It is possible to limit the liabilities of some of the partners by establishing a **limited partnership**, wherein certain partners are designated *general partners* and others *limited partners*. In a limited partnership, the limited partners are liable only for the amount of their investment in the partnership, while the general partners have unlimited liability. However, the limited partners typically have no control—it rests solely with the general partners—and their returns are likewise limited. Limited partners must be aware that they can lose their limited liability status if they become active in managing the business. Limited partnerships are common in real estate, oil, equipment leasing ventures, and venture capital. However, they are not widely used in general business situations because no one partner is usually willing to be the general partner and thus accept the majority of the business's risk, and none of the others are willing to be limited partners and give up all control.

In both regular and limited partnerships at least one partner is liable for the debts of the partnership. However, in a **limited liability partnership (LLP)**, all partners enjoy limited liability with regard to their business partners' professional negligence, and their potential losses are limited to their investment in the LLP. Only lawyers and accountants can form LLPs, though this may broaden to include other professions in the future.

Many Owners: A Corporation

Most partnerships have difficulty attracting substantial amounts of capital. This is generally not a problem for a slow-growing business, but if a business's products or services really catch on, and if it needs to raise large sums of money to capitalize on its opportunities, the difficulty in attracting capital becomes a real drawback. Thus, many growth companies began life as a proprietorship or partnership, but at some point their founders found it necessary to convert to a corporation. Some companies, in anticipation of growth, begin as corporations. A **corporation** is a legal entity created by provincial and federal laws, and it is separate and distinct from its owners and managers. This separation gives the corporation three major advantages: (1) *unlimited* life—a corporation can continue after its original owners and managers are deceased; (2) *easy transferability of ownership interest*—ownership interests can be divided into shares of stock, which can be transferred far more easily than can proprietorship or partnership interests; and (3) *limited liability*—losses are limited to the actual funds invested.

To illustrate limited liability, suppose you invested $10,000 in a partnership that then went bankrupt and owed $1 million. Because the owners are liable for the debts of a partnership, you could be assessed for a share of the company's debt, and you could be held liable for the entire $1 million if your partners were unable to pay their shares. On the other hand, if you invested $10,000 in the shares of a corporation that then went bankrupt, your potential loss on the investment would be limited to your $10,000 investment.[1] Unlimited life, easy transferability of ownership interest, and limited liability make it much easier for corporations than for proprietorships or partnerships to raise money in the financial markets and grow into large companies.

The corporate form offers significant advantages over proprietorships and partnerships, but it also has two disadvantages: (1) Corporate earnings may be subject to double taxation—the earnings of the corporation are taxed at the corporate level, and then earnings paid out as dividends are taxed again as income to the shareholders.[2] (2) Setting up a corporation involves preparing articles of incorporation, writing a set of bylaws, and filing the required provincial and federal reports, which is more complex and time consuming than creating a proprietorship or a partnership.

The articles of incorporation include the following information: (1) name of the proposed corporation, (2) the registered office, (3) the share class description, (4) restrictions on share transfers, and (5) the number of directors. An initial registered office address and first board of directors form must also be completed. This information is filed with Corporations Canada, and when it is approved, the corporation is officially in existence.[3] Once the corporation begins operating, there are requirements to file annual returns and GST/HST reports, along with any changes to directors and the registered office address.

The bylaws are a set of rules drawn up by the founders of the corporation. Included are points such as (1) how directors are to be elected (all elected each year, or perhaps one-third each year for three-year terms); (2) whether the existing shareholders will have the first right to buy any new shares the firm issues; and (3) procedures for changing the bylaws themselves, should conditions require it.

There are actually several different types of corporations. Professionals such as doctors, lawyers, and accountants often form a **professional corporation (PC)**. These types of corporations do not relieve the participants of professional (malpractice) liability. Indeed, the primary motivation behind the professional corporation was to provide a way for groups of

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[1]In the case of very small corporations, the limited liability may be fiction because lenders frequently require personal guarantees from the shareholders.

[2]The dividend tax credit offers tax relief to Canadian investors receiving dividends from Canadian corporations, partly offsetting the double taxation.

[3]Businesses can be incorporated either provincially or federally. If provincially, the articles must be submitted to the appropriate provincial ministry.

FINANCE: IN FOCUS

The Rise and Fall of Income Trusts

An income trust is an equity investment created to distribute all of a business's free cash flow to investors in a tax-efficient manner. Cash-producing assets such as real estate (real estate investment trusts; REITs) make up the majority of income trusts. Since the goal is to distribute as much free cash flow as possible, businesses that have not required significant capital expenditures in the past have been the best candidates.

Whereas dividends received by investors are taxed at both the corporate and individual level, income trust cash distributions are taxed only in the hands of investors. Since income trusts are taxed preferentially, their value from 1994 to 2007 grew 100-fold, from $1.93 billion to $192 billion. Owing to concerns over tax fairness, the potential for lost government revenue, and lack of reinvested earnings for innovation, in 2011 the federal government eliminated the tax advantage for most income trusts. As a consequence, many income trusts were converted back into corporations, while others were bought out. Certain REITs, such as RioCan and Calloway, were exempt from the tax changes and continue to offer tax-advantaged distributions to investors.

professionals to incorporate and thereby avoid certain types of unlimited liability, yet still be held responsible for professional liability.

Growing and Managing a Corporation

Once a corporation has been established, how does it evolve? When entrepreneurs start a company, they usually provide all the financing from their personal resources, which may include savings, second mortgages, or even credit cards. As the corporation grows, it needs factories, equipment, inventory, and other resources to support its growth. In time, the entrepreneurs usually deplete their own resources and must turn to external financing. Many young companies are too risky for banks, so the founders must sell shares to outsiders, such as friends, family, private investors (often called angels), or venture capitalists. As *shares* and *stocks* are used in Canada and the United States, both terms are used interchangeably in this text. If the corporation continues to grow, it may become successful enough to attract lending from banks, or it may even raise additional funds through an **initial public offering (IPO)** by selling shares to the public at large. After an IPO, corporations support their growth by borrowing from banks, issuing debt, or selling additional shares. In short, a corporation's ability to grow depends on its interactions with the financial markets, which we describe in much more detail later in this chapter.

For proprietorships, partnerships, and small corporations, the firm's owners are also its managers. This is usually not true for a large corporation, which means that large firms' shareholders, who are its owners, face a very serious problem. What is to prevent managers from acting in their own best interests, rather than in the best interests of the owners? This is called an **agency problem** because managers are hired as agents to act on behalf of the owners. Agency problems can be addressed by a company's *corporate governance*, which is the set of rules that control a company's behaviour towards its directors, managers, employees, shareholders, creditors, customers, competitors, and community. We will have much more to say about agency problems and corporate governance throughout the book, especially in Chapters 12, 16, 22, and 23.[4]

CONCEPT REVIEW

1. What are the key differences between proprietorships, partnerships, and corporations?
2. Describe some special types of partnerships and corporations, and explain the differences among them.

[4]The classic work on agency theory is Michael C. Jensen and William H. Meckling, "Theory of the Firm, Managerial Behavior, Agency Costs, and Ownership Structure," *Journal of Financial Economics*, October 1976, 305–60. Another article by Jensen specifically addresses these issues; see "Value Maximization, Stakeholder Theory, and the Corporate Objective Function," *Journal of Applied Corporate Finance*, Fall 2001, 8–21. For an overview of corporate governance, see Stuart Gillan, "Recent Developments in Corporate Governance: An Overview," *Journal of Corporate Finance*, June 2006, 381–402.

1.3 The Primary Objective of the Corporation: Value Maximization

Shareholders are the owners of a corporation, and they purchase shares because they want to earn a good return on their investment without undue risk exposure. In most cases, shareholders elect directors, who then hire managers to run the corporation on a day-to-day basis. Because managers are supposed to be working on behalf of shareholders, they should pursue policies that enhance shareholder value. Consequently, throughout this book we operate on the assumption that management's primary objective should be *shareholder wealth maximization*.

The *market price* is the share price that we observe in the financial markets. We later explain in detail how share prices are determined, but for now it is enough to say that a company's market price incorporates the information available to investors. If the market price reflects all *relevant* information, then the observed price is also the *fundamental, or intrinsic, price*. However, investors rarely have all relevant information. For example, companies report most major decisions, but they sometimes withhold critical information to prevent competitors from gaining strategic advantages.

Unfortunately, some managers deliberately mislead investors by taking actions to make their companies appear more valuable than they truly are. Sometimes these actions are illegal, such as those taken by the senior managers at Enron. Sometimes the actions are legal, but they are taken to push the current market price above its fundamental price in the short term. For example, suppose a utility's share price is equal to its fundamental price of $50 per share. What would happen if the utility substantially reduced its tree-trimming program, but didn't tell investors? This would lower current costs and thus boost current earnings and current cash flow, but it would also lead to major expenditures in the future when breaking limbs damage the lines. If investors were told about the major repair costs facing the company, the market price would immediately drop to a new fundamental value of $45. But if investors were kept in the dark, they might misinterpret the higher-than-expected current earnings, and the market price might go up to $52. Investors would eventually understand the situation when the company later incurred large costs to repair the damaged lines; when that happened, the price would fall to its fundamental value of $45.

Consider the hypothetical sequence of events. The company's managers deceived investors, and the price rose to $52 when it would have fallen to $45 if not for the deception. Of course, this benefited those who owned the shares at the time of the deception, including managers with stock options. But when the deception came to light, those shareholders who still owned the shares suffered a significant loss, ending up with shares worth less than their original fundamental value. If the managers cashed in their stock options prior to this, then only the shareholders were hurt by the deception. Because the managers were hired to act in the interests of shareholders, their deception was a breach of their fiduciary responsibility. In addition, the managers' deception damaged the company's credibility, making it harder to raise capital in the future.

Therefore, when we say that management's objective should be to maximize shareholder wealth, we really mean it is to *maximize the fundamental price of the firm's common shares*, not just the current market price. Firms do, of course, have other objectives; in particular, the managers who make the actual decisions are interested in their own personal satisfaction, in their employees' welfare, and in the good of the community and of society at large. Still, for the reasons set forth in the following sections, *maximizing the fundamental share price is the most important objective for most corporations*.

Separating the Investment and Consumption Decision

You may question whether maximizing value is the best investment decision for a company with owners that have different investment preferences. For instance, consider how a company would reconcile one owner's preference for dividend income now versus another owner's preference to forgo dividends currently, but with the prospect for larger dividends in the future. Should the company invest based on the first or second owners' preferences? Either preference could dictate the company's investment decision, but one (or both) may not maximize company value. The **separation theorem** shows that all investors are best off if the company's investment decisions are separate from the owners' (investors') preferences. Companies should invest so as to maximize their fundamental value, while owners

FINANCE: IN FOCUS

Ethics for Individuals and Businesses

Business ethics are a company's attitude and conduct toward its employees, customers, community, and shareholders. A firm's commitment to business ethics can be measured by the tendency of its employees, from the top down, to adhere to laws, regulations, and moral standards relating to product safety and quality, fair employment practices, fair marketing and selling practices, the use of confidential information for personal gain, community involvement, and illegal payments to obtain business.

Ethical Dilemmas

When conflicts arise between profits and ethics, sometimes legal and ethical considerations make the choice obvious. At other times the right choice isn't clear. For example, suppose a railway company's managers know that its coal trains are polluting the air, but the amount of pollution is within legal limits and further reduction would be costly, causing harm to their shareholders. Are the managers ethically bound to reduce pollution? Aren't they also ethically bound to act in their shareholders' best interests?

Ethical Responsibility

An international survey by accounting firm Ernst & Young in 2014 reported that 46% of chief financial officers thought it was acceptable to undertake one or more unethical actions to help a business survive an economic downturn. While such behaviour may be more common in developing economies, Canada too has its share of unethical lapses. The Quebec government has uncovered significant illegal activities by construction companies bidding on government projects. Montreal-based engineering giant SNC-Lavalin was also caught up in a bribery case worth $56 million, leading to its CEO being "relieved of his duties" and subsequently being charged with fraud.

Protecting Ethical Employees

If employees discover questionable activities or are given questionable orders, should they obey their bosses' orders, refuse to obey those orders, or report the situation to a higher authority, such as the company's board of directors, its auditors, or a prosecutor? Employees who report improper actions are often fired or otherwise penalized, and this keeps many people from reporting situations that should be investigated. To help alleviate this problem, the U.S. Congress in 2002 passed the Sarbanes-Oxley Act, with a provision designed to protect "whistle blowers."

The Canadian response was in two parts. In 2005 the federal government passed the Public Servants Disclosure Protection Act to protect whistle blowers within the federal government. A federal civil servant can now ask the Public Sector Integrity Commissioner to investigate allegations of (a) wrongdoing and (b) retaliation for reporting wrongdoing. To address weaknesses in the regulation of publicly traded companies, the Canadian Securities Administrators have brought forward a number of new rules and guidelines—called National Instruments—which closely follow the rules set by Sarbanes-Oxley and the U.S. Securities Exchange Commission.

can realize their own unique preferences (for current or future dividends) through their own personal investment choices.[5]

Stock Price Maximization and Social Welfare

If a firm attempts to maximize its fundamental share price, is this good or bad for society? In general, it is good. Aside from illegal actions such as fraudulent accounting, exploiting monopoly power, violating safety codes, and failing to meet environmental standards, *the same actions that maximize fundamental share prices also benefit society.* Here are some of the reasons:

1. **To a large extent, the owners of shares *are* society.** Seventy-five years ago this was not true, because most share ownership was concentrated in the hands of a relatively small segment of society, comprising of the wealthiest individuals. Since then, there has been explosive growth in pension funds, life insurance companies, and mutual funds. These institutions now own more than 61% of all stock, which means that most individuals have an indirect stake in the stock market. In addition, 10% of all Canadian households

[5]The classic work on separation theorem is Irving Fisher, *The Theory of Interest*, 1930.

now own stock directly. Thus, most members of society now have an important stake in the stock market, either directly or indirectly. Therefore, when a manager takes actions to maximize the share price, this improves the quality of life for millions of ordinary citizens.

2. **Consumers benefit.** Share price maximization requires efficient, low-cost businesses that produce high-quality goods and services at the lowest possible cost. This means that companies must develop products and services that consumers want and need, which leads to new technology and new products. Also, companies that maximize their share price must generate growth in sales by creating value for customers in the form of efficient and courteous service, adequate stocks of merchandise, and well-located business establishments.

   People sometimes argue that firms, in their efforts to raise profits and share prices, increase product prices and gouge the public. In a reasonably competitive economy, which we have, prices are constrained by competition and consumer resistance. If a firm raises its prices beyond reasonable levels, it will lose its market share. Even giant firms such as Dell and Coca-Cola lose business to domestic and foreign competitors, if they set prices above the level necessary to cover production costs plus a "normal" profit. Of course, firms *want* to earn more, and they constantly try to cut costs, develop new products, and so on, and thereby earn above-normal profits. Note, though, that if they are indeed successful and do earn above-normal profits, those very profits will attract competition, which will eventually drive prices down. So again, the main long-term beneficiary is the consumer.

3. **Employees benefit.** There are cases where a stock increases when a company announces a plan to lay off employees, but viewed over time this is the exception rather than the rule. In general, companies that successfully increase share prices also grow and add more employees, thus benefiting society. Note too that many governments around the world, including our federal and provincial governments, are privatizing some of their state-owned activities by selling these operations to investors. Perhaps not surprisingly, the sales and cash flows of recently privatized companies generally improve. Moreover, studies show that these newly privatized companies tend to grow and thus require more employees when they are managed with the goal of share price maximization.

FINANCE: IN FOCUS

Corporate Scandals and Maximizing Share Price

The list of corporate scandals seems to go on forever: Bre-X, Enron, Nortel, WorldCom, Tyco, Hollinger. . . . At first glance, it's tempting to say, "Look what happens when managers care only about maximizing share price." But a closer look reveals a much different story. In fact, if these managers were trying to maximize share price, given the resulting values of these companies, they failed dismally.

Although details vary from company to company, a few common themes emerge. First, managerial compensation was linked to the short-term performance of the share price via poorly designed stock option and stock grant programs. This provided managers with a powerful incentive to drive up the share price at the option vesting date without worrying about the future. Second, it is virtually impossible to take *legal* actions that drive up the share price in the short term without harming it in the long term because the value of a company is based on all of its future free cash flows and not just cash flows in the immediate future. Because legal actions to quickly drive up the share price didn't exist (other than the old-fashioned ones, such as increasing sales, cutting costs, or reducing capital requirements), these managers began bending a few rules. Third, as they initially got away with bending rules, their egos and hubris grew to such an extent that they felt they were above all rules, so they began breaking even more rules.

Share prices did go up, at least temporarily, but as the scandals became public, the shares' prices plummeted, and in some cases the companies were ruined.

There are several important lessons to be learned from these examples. First, people respond to incentives, and poorly designed incentives can cause disastrous results. Second, ethical violations usually begin with small steps; if shareholders want managers to avoid large ethical violations, then they shouldn't let them make the small ones. Third, there is no shortcut to creating lasting value. It takes hard work to increase sales, cut costs, and reduce capital requirements, but this is the formula for success.